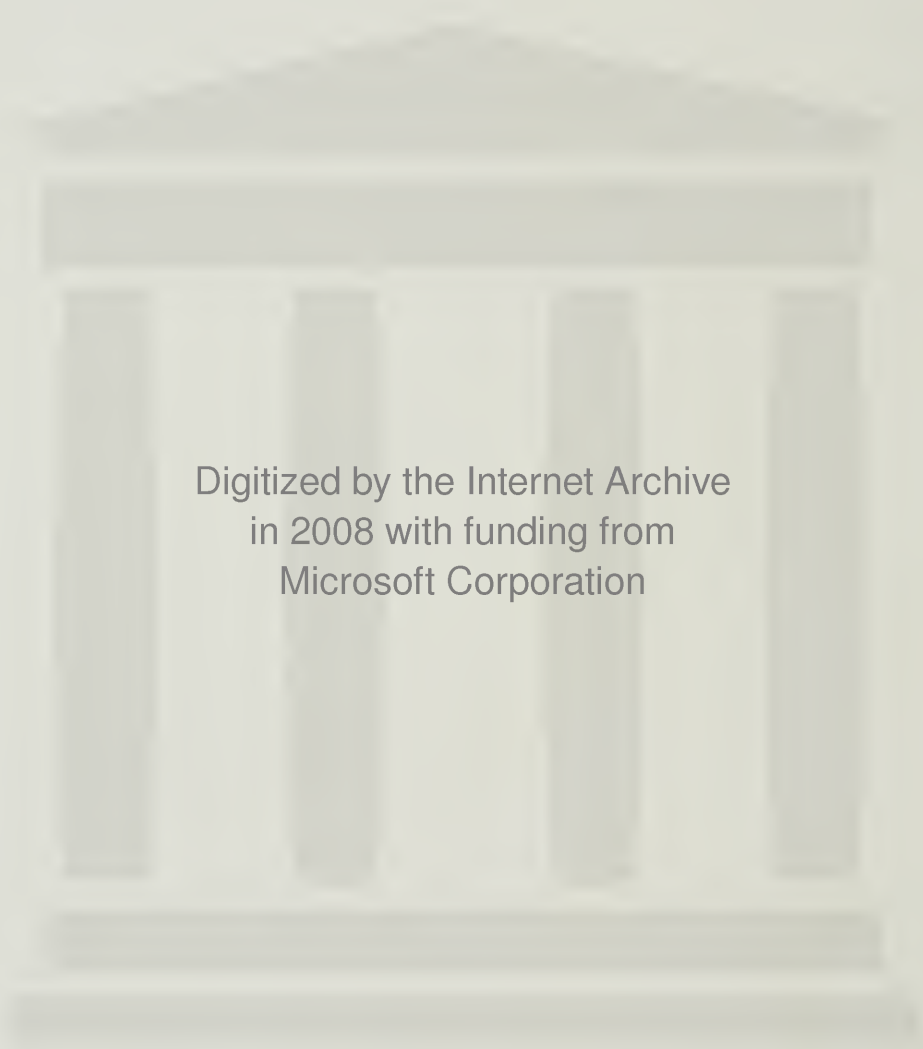




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Osprey

VOLUME IV.

FEBRUARY, 1900.

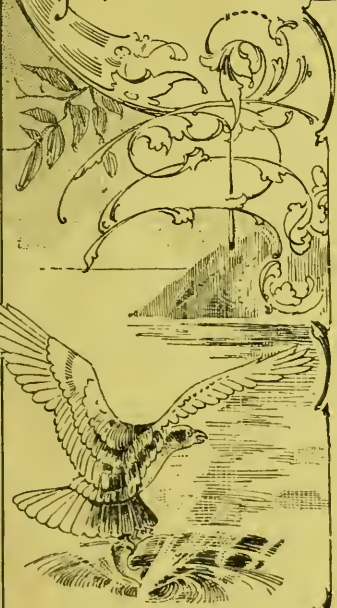
NUMBER 6.



THE OSPREY

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Original Articles.

BIRDS OF THE ROAD.

By PAUL BARTSCH, Washington, D. C.

2. JANUARY FEBRUARY.

Since my last notes in the *OSPREY* we have had real Washington winter weather. I say Washington winter weather because the Metropolis seems to have a climate peculiarly its own. One day bright and cheery as if promising the return of the fair days of December followed mockingly the next, by ice and snow and a blast which makes one wish for Eskimo robes. Washington weather is very uncertain, and you can no more rely upon the signs of nature, than the weather map itself, as to what tomorrow will be.

I have certainly felt sorry for the poor birds this month—and yet they are much better off than they were a year ago, when the blizzard held us all confined. Then many of our winter visitors came to the city, to feed upon the refuse matter in the streets. Continual snow-fall had buried the tops of the weeds, and stored their food beyond reach.

I remember taking a trip on February 12, intending to visit Soldiers' Home, swing over to Benning, thence down to Anacostia. I started across country, from Le Droit Park, wading through about 18 inches of snow. It seemed a delightful pastime to plough through the little packed mantle of fleecy flakes. Before I had covered the first half mile, I began to be less enthusiastic, the more so, since many of the birds which I had expected, (northern visitors, forced south by the severe cold) were nowhere apparent. After crossing First street, continuing in the direction of Prospect Hill Cemetery, I decided to shorten the course, by leaving Soldiers' Home to the left and making a straight line towards Benning. I followed the new cut which was being made to extend North Capitol street to the Home, and found I was quite willing to rest on an old wagon which I bared from snow, by forcible contact after sliding down an embankment, hidden by a drift. This was at the southern end of the cut. I had been working very hard trying to get to where I might see rare winter visitors and was quite ex-

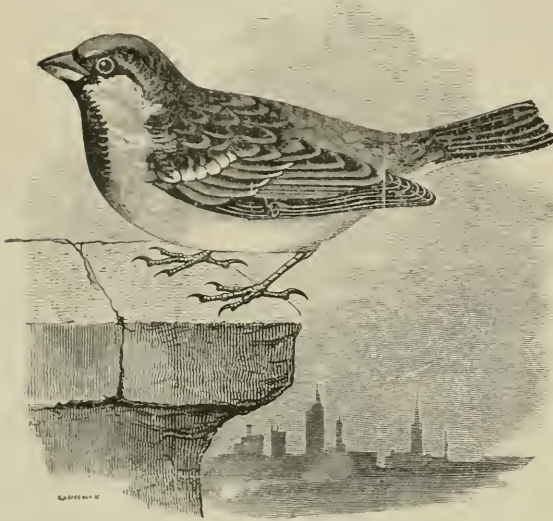
hausted. While seated here allowing my pulse to come some where near its normal, I heard a faint peep—peep—peep, the welcome note of a northern friend, the Horned Lark. Looking about, I soon discovered him in his wavy flight. He alighted on a nearby hill-side, and my glasses showed him busily working the few tops of the few bunches of weeds which were tall enough to keep their heads above the snow. The poor fellow was hungry, and seemed to be half frozen. He appeared to have a hard time gleaning the little seeds from their capsules. While seated here I also noted several Snow-birds coming from the evergreens of the cemetery, flying across the cut. They too appeared to be suffering from cold and hunger, as did some Tree Sparrows which were in their company. These were hard times for the birds, particularly those which winter here every year and are not accustomed to be placed in such straits. I remember how sad it all appeared. There was little gladness in their little bodies that day. A Downy however, was the exception and the only one. He joined the band of Juncos and Tree Sparrows, but was unable to call any more satisfaction from them by his encouraging notes than the mere whimpering under-tone conversation, every note of which seemed to speak of hunger and cold. This is not all these little feathered bodies are exposed to, for while I was here a swift winged Cooper's Hawk sallied amongst them but failed, thanks to the writer, to carry off any member of that little band, just then. He also was hungry.

I finally made my way to Lincoln avenue and returned to the city abandoning the original plan. The birds too had come to the city, for at the intersection of Florida avenue and North Capitol street, I met a flock of Horned Larks contesting with the English Sparrows, for the droppings in the street. They appeared to be tumbling rather than walking. Hunger and cold had made them so fearless, that I was able to approach them almost close enough to touch them with my feet.

The blizzard which followed, February 13, was hard on the English Sparrow. The day after, while walking to office down Seventh

in plain view, was a bulky, large nest. What might it be? I had never seen one like it. There were plenty of Sparrows about, but I had never known an English Sparrow to weave a nest in the branches of a tree. The owner, however, soon laid claim to it, and great was my surprise to see that it did belong to *Passer domesticus*. I have seen many similarly constructed, but not this year; the decrease by the blizzard seems not to have been completely made up as yet, and there appear to be enough holes for occupation. For I believe Mr. Passer only resorts to the building of a house when there are none to let. There is no telling where he will not take up his abode. You may find it from a knot-hole which gives him entrance to the space between the weather-boarding and plaster of a dwelling, to cavities in trees and other places, and as a last resort he will build a cradle among the branches themselves.

He has doubtless come to stay and will outlast all of our native birds, among which I know none so plastic, adaptive and prolific as our English Sparrow. His enemies too, are few, very few—only twice have I seen small Hawks give them chase in the Smithsonian grounds. Once it was the Sharp Shinned, the other time a Pigeon Hawk. His greatest enemy here is the little Screech Owl. One of our neighbors told me that a little Owl had taken up her abode



THE ENGLISH SPARROW.

street, I saw ten times more men shoveling snow, than Sparrows. Great numbers must have perished that day. But who would think so now? Our streets, our lawns, our parks, our gardens, yea, our very houses are again tenanted by them. They are the most abundant bird of this season and I wish I might devote a lengthy chapter on their habits. For although they have been called by every evil name that in anyway might be synonymous with good-for-nothingness, they nevertheless appeal to me as interesting as, if not more so than many of our native birds.

They have roosts, basking places and homes proper. The roosts at Washington are usually in the ivy and creepers which beautifully cover many of the buildings and furnish a dense retreat for the protection of our birds from winds, colds and enemies. The basking places are interesting. I know of two. One is a bush in front of the United States National Museum, in the corner where the winding road turns toward Ninth street. Here one is sure to find a goodly company assembled in early morning, when the sun is getting up, basking in his rays. Another is not far from this place. It is a shrub on the west side of the walk, leading north from the Smithsonian about half way between the first and second cross-roads. Here, very likely the same crowd mounts the twigs to bid Old Sol farewell at eve.

I have been very much interested in their household affairs ever since I came to Washington. I think the English Sparrow was the first acquaintance to greet me upon my arrival and I suppose this accounts for my having an occasional word in his favor. I remember entering the Smithsonian grounds by way of Seventh street that day, the day I reported for duty, and at its very entrance above the little guard-house,



THE SCREECH OWL (*Megascops asio*).

in his chestnut tree, and that she must have raised sad havoc with the Sparrows, for they have all left his place. I heard a great commotion in one of our cedars the other night; it is a favorite roosting of our Sparrows, and earlier in the season also for Juncos. I looked closely—it was a bright moonlight night—and beheld the shadow-like form of *Megascops asio* glide softly away. He had evidently exhausted our neighbor's supply, and found a new full larder.

Another never-failing bird supply for study at this season are the Crows, long streams of which can be seen every evening flying to their roosting station in Virginia. It is interesting to note with what accuracy they follow the instructions of their leader, turning here or there, just as the bunch ahead of them has done. Most interesting are the antics in which they indulge, when they visit the feeding grounds in the morning.

A bunch will come to a certain place in the river, mount high in the air, perform, it would seem, every possible feat of wing, before they all set to, to gain their breakfast. These are hard times, for just think, to be forced to wade out into ice cold water in quest of almost anything alive or dead, that will furnish a bit of food. I have watched them flying over the water, every now and then dipping down for some morsel, wetting the tips of their wings, bill and the feet as they pick it up, almost sitting down upon the waves. These are feats of the Fish Crow. The larger member is content to stalk about the mud laid bare by the retreating tide. But the river is frozen now, and they have to resort to other food supplies. A strange one is furnished by *Polonia imperialis* whose fruit capsules I have noticed them rifling for several days.

ESTHETIC BIRDS:

THE HUT AND THE GARDEN OF THE GARDENER BIRD OF NEW GUINEA.

AFTER ODOARDO BECCARI.

EDITORIAL NOTE.

The hut and the garden of the Gardiner Bird of New Guinea. After Odoardo Beccari.

The esthetic sense more or less developed in all the Bower Birds, is manifest to the greatest extent, among those known, in the *Amblyornis inornata* of New Guinea. This bird has received from the Natives of the region in which it is found, among others, the designation of Tukan Robon which is translated as the Gardener. The attention of the Italian traveller and naturalist, Signor Odoardo Beccari, was attracted to this bird by the repeated accounts of the Natives when in New Guinea, and in 1877 he communicated an interesting record of his observations to the *Annali of the Civic Museum of Genoa* (*Le capanne e i giardini dell' Amblyornis inornata* in *Annali Mus. Civ. Genova*, 1877, p. 382-400). The part specifically relating to the bird was translated for the *Gardeners' Chronicle* of London (n. s., vol. 9, p. 332-333) and we have availed ourselves of this translation with a few trilling rectifications.

THE BIRD.

"The *Amblyornis inornata*—or, as I propose to name it, the Bird-gardener—is a Bird of Paradise of the dimensions of a turtle-dove. The specific name 'inornata' well suggests its very simple dress. It has none of the ornaments common to the members of its family, its feathers being of several shades of brown, and showing no sexual differences.

"It was shot some years ago by the hunters of Mynheer von Rosen. The first descriptions of its powers of building (the constructions were called 'nests') were given by the hunters of Mynheer Bruijn. They endeavoured to bring one of the nests to Ternate, but it was found impossible to do this, both by reason of its great size and the difficulty of transporting it.

"I have fortunately been able to examine these constructions at remote places where they are

erected. On June 20, 1875, I left Andai for Hatam, on Mount Arfak. I had been forced to stay a day at Warmendi to give rest to my porters. At this time only five men were with me; some were suffering from fever, and the remaining porters declined to proceed. We had been on our way since early morning, and at 1 o'clock we intended to proceed to the village of Hatam, the end of our journey.

"We were on a projecting spur of Mount Arfak. The virgin forest was very beautiful. Scarcely a ray of sunshine penetrated the branches. The ground was almost destitute of vegetation. A little trackway proved that the inhabitants were at no great distance. A limpid fountain had evidently been frequented. I found here a new *Balanophora*, like a small Orange or a small fungus. I was distracted by the songs and the screams of new birds, and every turn in the path showed me something new and surprising. I had just killed a small new marsupial (*Phascalogale dorsalis*, Pet. and Doria), that balanced itself on the stem of a great tree like a squirrel, and turning round, I suddenly stood before the most remarkable specimen of the industry of an animal. It was a hut or bower close to a small meadow enamelled with flowers. The whole was on a diminutive scale. I immediately recognized the famous nests described by the hunters of Bruijn. I did not suspect, however, then, that they had anything to do with the constructions of the *Chlamydodæ*. After well observing the whole, I gave strict orders to my hunters not to destroy the little building. That, however, was an unnecessary caution, since the Papuans take great care never to disturb these nests or bowers, even if they are in their way. The birds had evidently enjoyed the greatest quiet until we happened, unfortunately for them, to come near them. We had reached the height of about 4800 feet, and after half an hour's walk we were at our journey's end.

THE HUT.

"I had now full employment in the preparation of my treasure, and I gave orders to my people not to shoot many of the birds. The nest I had seen first was the nearest one to my halting place. One morning I took colours, brushes, pencils, and gun, and went to the spot. I there made the sketch which I now publish (fig. 1). While I was there neither host nor hostess were at home. I could not wait for them. My hunters saw them entering and going out, when they watched their movements to shoot them. I could not ascertain whether this bower was occupied by one pair or by several pairs of birds, or whether the sexes were in equal or unequal numbers—whether the male

ing manner, resting on the ground, leaving an aperture for the entrance. Thus is obtained a conical and very regular hut. When the work is complete many other branches are placed transversely in various ways, to make the whole quite firm and impermeable. A circular gallery is left between the walls and the central cone. The whole is nearly 3 feet in diameter. All the stems used by the *Amblyornis* are the thin stems of an Orchid (*Dendrobium*), an epiphyte forming large tufts on the mossy branches of great trees, easily bent like straw, and generally about 20 in. long. The stalks had the leaves, which are small and straight, still fresh and living on them; which leads me to conclude that this plant was selected by the bird to prevent rotting and mould in the building, since it keeps



Hut of the Gardener Bird, *Amblyornis inornatus*.

alone was the builder, or whether the wife assisted in the construction. I believe, however, that such a nest lasts for several seasons.

"The *Amblyornis* selects a flat even place around the trunk of a small tree, that is as thick and as high as a walking-stick of middle-size. It begins by constructing at the base of the tree a kind of a cone, chiefly of moss, of the size of a man's hand. The trunk of the tree becomes the central pillar, and the whole building is supported by it. The height of the pillar is a little less than that of the whole of the hut, not quite reaching 2 feet. On the top of the central pillar twigs are then methodically placed in a radiat-

alive for a long time, as is so often the case with epiphytical Orchids.

"The refined sense of the bird is not satisfied with building a hut. It is wonderful to find that the bird has the same ideas as a man, that is to say, what pleases the one gratifies the other. The passion for flowers and gardens is a sign of good taste and refinement. I discovered that the inhabitants of Arfak, however, did not follow the example of the *Amblyornis*. Their houses are quite inaccessible from dirt.

THE GARDEN.

"Now let me describe the garden of the Am-

blyornis. Before the cottage there is a meadow of moss. This is brought to the spot and kept free from grass, stones, or anything which would offend the eye. On this green turf, flowers and fruits of pretty colour are placed so as to form an elegant little garden. "The greater part of the decoration is collected round the entrance to the nest, and it would appear that the husband offers there his daily gifts to his wife. The objects are very various, but always of vivid colour. There were some fruits of a *Garcinia* like a small-sized Apple. Others were the fruits of *Gardenias* of a deep yellow colour in the interior. I saw also small rosy fruits, probably of a *Scitamineaceous* plant, and beautiful rosy flowers of splendid new *Vaccinium* (*Agapetes Amblyornidis*). There were also fungi and mottled insects placed on the turf. As soon as the objects are faded they are moved to the back of the hut.

"The good taste of the Amblyornis is not only proved by the nice home it builds. It is a clever bird, called by the inhabitants Buruk Gurea—master bird, since it imitates the songs and screamings of numerous birds so well that it brought my hunters to despair, who were but

too often misled by the bird. Another name of the bird is Tukan Robon, which means a gardener."



Ground plan of the Gardener Bird's hut, showing the tent pole, opening, and garden.

NESTING NOTES ON THE WADERS OF THE DEVILS LAKE REGION.

BY EUGENE S. ROLFE, Minnewaukan, N. Dak.

Let those who will list among the Waders of this region those merely observed in passage during the migrations. I see nothing distinctive in lists of this description and speak only of those species known or believed by me to make this their summer home.

Wilson's Phalarope is very abundant and to be found after May 15, about the edges of all sloughs, ponds, lakes and wet meadows. On two small flat islands in Devils Lake, that but a few years ago were mere sandbars and are now covered with scant grass and weeds, I observed them this month (June, 1899,) in great numbers. Their nests, of which I chanced upon some half dozen, were placed invariably on the ground in the midst of a slight tussock of grass—the trifling lining, sometimes, being necessary to keep the eggs up out of the damp ooze beneath, which, four in number, are sometimes so highly polished and rich in coloring as to make it difficult to mark them legibly with a pencil.

When flushed from the nest the hurried flight of the sitting male for some dozen feet or more before alighting is amusing, the head being held high while the feet and legs dangle slightly downward. Then follow the usual subterfuges to lure the intruder away such as are only common to the female of other species.

The only note I have ever heard is that aptly described by Elliott as a "nasal, quack-like sound", so faint, however, as to be scarcely noticeable and heard only when the birds circle about close overhead after being disturbed on their nesting ground.

The American Avocet is becoming somewhat uncommon here as the country is developing so rapidly. Four years ago about the muddy

shores of an alkaline lake a colony of some twenty-five pairs made their summer home.

Since that time I have at no time been able to locate a colony of more than three or four pairs, and this year a scattered pair at rare intervals is the sum of my observation. In my experience the nest is invariably placed on the flat, muddy, alkaline shore within a few feet of the water, without the slightest effort at concealment and much after the manner of the common Tern, a common associate of the Avocet hereabouts. The eggs are generally four, and, except for their larger size and pyriform tendency, not wholly unlike many examples of eggs of their comrades, the Terns. Oftentimes the eggs are completely encrusted with alkaline mud from the feet of the sitting bird.

I never yet succeeding in observing the bird on the nest. She is of such bright, conspicuous colors, and her nest is so exposed that she finds it expedient to vacate the premises while the intruder is yet hundreds of yards away, foolishly, however, setting up such a clamor, joined in by her mate, as to give assurance of a nest near by.

I read in Davies', Goss' and Elliott's that the nest is placed in tall grass, and while this may happen, yet, as I have elsewhere stated, I regard the crude picture given by the notorious Raine at p. 54 of *Bird Nesting in Northwest Canada* as very graphic and true to life, both as to the favorite breeding haunts of the species and location of the nests and the general appearance and demeanor of the birds.

Whether Wilson's Snipe ever nests in this region, I cannot say with certainty. Twice, I think, I have noted solitary individuals here about July 1.

A pair of Stilt Sandpipers are to be seen any day this month (June) feeding unconcernedly within sight of this town on a wet, closely cropped meadow enclosed in a pasture and within one hundred feet of the roadside. If they ever seemed to have any business other than feeding one might think they are nesting here far away from their Arctic summer home.

If the Least Sandpiper does not nest about Devils Lake then all signs fail, yet the positive proof is still wanting. Many times before this year I have observed the little fellows in pairs or wisps all through the summer happily feeding along the sandy, gravelly shores. This year I have spent more time than usual about the lake, and while I find no stronger symptoms of nesting yet my respect for this blithe species is lessened if in fact they are simply idlers here in such numbers all through the bright summer, so busy a season for other varieties. As stated in "Birds of the Northwest" Dr. Cones noted the Least Sandpiper all through the breeding season in Northern Dakota and suspected they might be nesting.

The Marbled Godwit is becoming rare hereabouts as a summer resident. Since the Northern migration ended I have this year seen but a single pair. The nest has been taken here at rare intervals. Mr. Bryant states that two years ago he chanced upon a nest besides an old roadway on the wild prairie and some little distance from water. The same year a field collector here bought a pail full of eggs from a settler, among which were three eggs that might fairly be attributed to this species, said to have been taken from a nest a few yards from a broad coulee in unsettled country. May 22, 1892, while driving across a ridge between two large marshes in new territory, I discovered a nest of this species containing full set of four eggs. The distress of the sitting bird was so great that my wife, to whom the spectacle was novel, persuaded me to leave the nest untouched!

The Western Willet might be called fairly common here through the summer, though where they hide their nests is becoming a serious puzzle to me. Now and then about some alkaline slough or lake a pair makes a vigorous onslaught on me saying in effect that I am trespassing too near the nest, but I never succeeded in locating it. I suspect the bird—unlike most other tattlers—is not a close sitter. Last summer a boy herding the town cows nearby noted that one of the animals far ahead flushed a Willet from the moderately long grass. The nest, to which he afterwards piloted me, was on high and dry prairie fully 100 yards from the edge of a wet meadow, and built after the manner of the Bartramian Sandpiper, which, if the books are correct, is an unusual instance both as to situation and construction. Almost any still evening before dark one or two of these birds may be seen and their stirring *pill will willet* heard near an alkaline pond and a slender coulee winding through the very outskirts of the village, and there is little doubt that their nest is concealed almost in our midst.

The Bartramian Sandpiper is an abundant breeder on the prairies here although the nest

is rarely discovered, except by flushing the bird which is a remarkably close sitter. I think I never detected the birds in the act of building. Being rarely shot at they are so tame and confiding that they barely turn aside to give room to a passer by. One wonders that a bird of such small, slender body is able to extrude an egg of such size as those usually found, though last year I noted one very beautiful set (now in the collection of G. Frean Morcom) scarcely larger than large eggs of Wilson's Phalarope though thicker and much more blunt.

Until this year I had regarded the Spotted Sandpiper as a rather rare breeder here, but I now discover that in this region it is more local than rare. On the two islands spoken of above I found this species in great profusion and as busy as bees in their housekeeping. From June 5 to 15 some half dozen nests were observed with completed sets built in the midst of slight tussocks of thin grass very similar to those of the Phalaropes.

The Kildeer appears as common here as elsewhere in the United States. Ranging in time from May 10th to June 20th, I have found the nest on gravelly knolls, on sandy ridges, in the edge of plowed fields, and on the gravel beach of the big lake. A boy who brings us green vegetables says that last season two pairs nested in their potato patch close to the house.

The Semipalmated Plover probably breeds here rarely. I had been so informed but hardly credited the claim till this year when I observed the birds in pairs all through June at three points above the lake, and though I did not discover the nest yet the conduct of the birds was suggestive of domestic operations. A common habit of this species is that of taking up a position on a good sized boulder in the edge of the water where it remains perfectly motionless for a long time as though in deep contemplation; but ordinarily it is busily engaged along the muddy shores in pursuit of its food, oftentimes suffering approach within a dozen yards before uttering its quick alarm cry as it takes wing.

This year I was fortunate in extending my acquaintance with the Belted Piping Plover. I do not understand the apparent disposition of the principal writers to pass this species over so lightly or as if it has doubtful title to a place in the list. It hasn't even a number in the list all to itself—and yet besides a habitat entirely different from that of the Piping Plover of the Atlantic coast the complete black band entirely encircling the lower neck is a *constant* feature, and not accidental in scattered individuals as suggested in even the latest edition of Cones' key.

My experience of last year as related in *OSPREY* for February gave me a clue to the nesting habits of the species and I sought them in similar places this year. At only three different localities were they to be found along some twenty miles of lake shore; on the two islands spoken of above and on a long, gravelly point running far out into the lake, and I shall be surprised if they are found breeding elsewhere in the state than about the shores and islands of Devils Lake, for during fifteen years here I have never even seen it elsewhere and imagine

that only here does it find conditions suited to its nature and taste.

To those who have met with the nest of the Piping Plover of the east the nesting habits of its belted relative of the west may not offer anything new; but they will probably bear me out in the statement that the nest though absolutely exposed to view is yet as difficult to discern as the most cunningly concealed grass nest. The problem is this: Given a strip of flat, gravelly shingle perhaps 20 feet long by 10 feet wide, absolutely bare of vegetation, to find a Plover's nest containing four eggs and in plain view somewhere in the center. Seeing the bird running rapidly away from this strip when approached within 60 yards, cross and recross this small space with the closest scrutiny, scanning every pebble, apparently, and then, baffled, withdraw to some concealed point 20 yards away and wait fifteen minutes for the parent bird to return and point out the exact location, (for she will do it) and then probably you'll fail again and have it all to do over before the eye finally succeeds in differentiating those sand-colored, finely spotted eggs from the surrounding gravel stones. Once definitely located the eye seems to see little else, and one wonders how it could have ever passed them over reposing so daintily in the slight depression on their unique bed of fine, smooth pebbles most carefully selected and arranged as the sole lining. Perhaps nothing but the extreme solicitude of the sitting bird, which leads her to bravely return to her eggs even while the intruder is near, has rendered the search successful.

Davies says of the Piping Plover that it is stated she rarely sits upon her eggs except at night, and in his account of the Belted species he says that its habits are those of *meloda*. It is my observation, however, that *circumcincta*

rarely leaves her nest except when disturbed, and then displays more than ordinary anxiety to get back, and it seems extremely improbable that either upon the Atlantic coast or in this region could eggs exposed all day on the open beach retain sufficient heat to insure hatching. This idea might arise from the fact that the sitting bird leaves her nest while yet an intruder is a long way off, and before the eye can catch the little sand-colored body running over the sand in a series of short spins, and it will be found she has already put some distance between herself and the nest. The eggs, however, let the day be sunny or cloudy, will always be found warm.

In my study of this species this year, I was especially fortunate in locating a colony of four pairs occupying a strip of shingle, lately a shore line before the receding of the waters of the lake, some 200 yards in length, and about 50 feet from the present water's edge. The alarm note is a single, clear, short, sweet, piping whistle. This is varied by two equally short, sweet notes quickly uttered, the second being two full tones below the first, and suggesting the two whistling notes employed by you years ago to bring to your side the ragged chum of boyhood—though far below the Plover's notes in musical quality. Sometimes when disturbed, and flying about this Plover titters a long, faint, mournful whistle, scarceful audible from a little distance.

The principal companions of this species, so far as observed this year, were the Ring-billed Gull, Common Tern, Least and Spotted Sandpiper, Semipalmated and Killdeer Plover, Wilson's Phalarope, Avocet, various species of ducks, and occasionally a big bunch of White Pelican.

THE REQUIREMENTS OF A FAUNAL LIST.

By W. E. CLYDE TODD.

Devoid of interest to the general reader, and too often passed over even by the professed biologist, the faunal list is yet invaluable to the student of zoo-geography, furnishing as it does the data essential to a proper elucidation and understanding of the various interesting problems in this important branch of biological science. Indeed, zoo-geography may be said to consist of the logical inductions and conclusions drawn from a number of local lists, themselves not necessarily of intrinsic value. It is therefore right and proper to encourage the publication of such lists, as in direct proportion to their number and excellence will be the extent of our knowledge and the exactness of our understanding of the geographical distribution of life.

It is further obvious that a list of the components of the fauna (or flora) of a given region will fulfill the above end according to, first, its accuracy, second, its completeness, and third, the fullness of its data. So many local lists deficient in these essential respects appear from time to time that it would seem desirable to indicate just what feature such papers should embrace so as to be most useful and valuable. The

time has gone by, in ornithology at least, when a merely nominal list of species can suffice for our requirements: we must know the local status of each species, and, that this knowledge may be fully intelligible, we need to know something about the region which it inhabits. A local list of birds presents perhaps greater difficulties in its proper construction than one in any other class, owing chiefly to the fact that birds are migratory and otherwise extremely mobile in character, and their exact status is frequently hard to determine, so that the significance of the presence or absence of a given species is often uncertain. The earlier authors were conspicuously vague and general in their statements along these lines, and not infrequently in absolute error. Comparatively little data of value are to be had from their works, and even in more recent years many writers have fallen far short of the desirable and proper standard. Indeed, when we consider the extent and character of the data available to Dr. J. A. Allen in 1871, when he published his memorable paper on the ornithological faunal areas of Eastern North America (Bulletin Museum Com-

parative Zoology, Volume II, Number 3), the wonder is that the conclusion reached were nearly so accurate as later work has shown them to be. The writer has had occasion to examine many local lists, as well as to prepare a number for his own use, and out of this experience have grown the suggestions embodied in the present paper. While these are intended to apply only to bird lists, it is believed that many of the ideas set forth will apply as well to the preparation of local lists in other departments of natural history.

A model faunal list consists of two parts: the introduction, or descriptive portion, and the list proper, with its annotations. The sequence of the subject-matter of the introduction, though not determined by an invariable rule, is orderly and logical, all the points being discussed fully and clearly, avoiding loose, vague, and careless statements. The geography of the region covered by the list should be carefully described, the more minutely the better. The exact boundaries of the district should be precisely indicated, as it is important to know to just what extent of the territory the observations as a whole refer, and what portions have been most thoroughly worked. The surface features are to be indicated in sufficient detail, defining and describing the various areas of plain and hill, mountain, plateau and valley, not omitting their respective altitudes above sea-level where known. The drainage system is to be worked out, comprising a suitable description of the water-courses, lakes and swamps.

Not less important, from its intimate relation to bird life, is the character of the vegetation of the various topographical areas, particularly as regards the forest-growth. The character and extent of the forest is to be indicated, specifying the most prominent and characteristic trees comprising it, particular attention being given to their affinities and local distribution. In the Eastern United States the distribution of conifers is of especial importance in this connection. Mention should be made of the birds characteristic of the various forest-areas, and such informal lists should form a part as well of the more detailed description of the tracts of open country, swamps, stream-banks, etc., upon whose botanical aspects notes are also desirable.

The time-period covered by the observations of the list, whether a number of years or but a few days, should be stated, with limiting dates. If more time were devoted to field-work at one season than another it should be so mentioned. Notes on the climate of the region, on migration and migration routes, on "fly-lines", on the relative abundance of certain groups of species, and any other facts of a general nature, are to be included in the discussion.

There should be added, at least where observations have not been confined to one period of the year, nominal lists of species, properly arranged under their respective categories as to seasonal status, each list being preceded by a statement of the number of species included therein. These lists constitute a convenient summary of the whole paper. The introduction may very properly closed with a discussion of the faunal position and relations of the region.

The first rule as to the list proper is: no species to be included whose occurrence or identification is in the least doubt. If such are thought worthy of mention at all they should be relegated to a supplementary "hypothetical list". For uniformity's sake the sequence and nomenclature of the species should follow that of some recognized standard, such as in this country, the "American Ornithologists' Union Check-List of North American Birds". It is well to avoid, as far as possible, sameness of expression in treating the different species, thus doing away with much undesirable monotony.

The seasonal status and abundance of a bird are the most important items to be noted. Thus, it should be indicated whether each species is a permanent resident, summer resident, winter resident, transient visitant during the migrations, or merely an accidental straggler. Not infrequently, however, it is uncertain to what category a given species properly belongs, owing perhaps to the fluctuation in abundance from season to season, or from year to year. In such cases full data on its occurrence should be given, from which the reader may draw his own conclusions. It often happens that a bird is resident as a species, but migratory as individuals. Again, some species may winter in small numbers, the bulk going farther south, while others may breed but sparingly, the bulk in such cases passing on to the northward. Transient visitants are often more abundant in spring than in fall, or *vice versa*, and have different haunts and habits. Some birds may be of regular occurrence, others quite the reverse.

The seasonal abundance of each species as thus outlined should be given in terms as explicit as possible, although it is unfortunately true that in the nature of the case the terms used to denote degrees of abundance do not mean the same to different persons. Often it is an advantage to compare the abundance of a given species with that of a near ally, stating their *relative* number. The more numerous a bird, the more general may be the discussion of its status and abundance, but in the case of rare species the data, precise locality, and circumstances of each occurrence should be given if possible. Exceptional and unseasonable occurrences of any species are always to be noted, with necessary particulars.

As a rule, it is safe in this latitude (Pennsylvania) to consider species found during June to be breeders, but to this there are conspicuous exceptions. It should therefore be stated upon what grounds the species is entered as a breeder, that is, the finding of a nest or unfledged young, or merely occurrence in or through the breeding season, noting also the usual time of nesting, and whether more than one brood is reared in a season. In cases where nests of rare species have been found, full particulars should be given, with a description of the nest and eggs, not forgetting the date and precise locality. Full data on the nesting of any species whose breeding in a given locality is exceptional is also desirable.

Scarcely less important, in the case of migratory species, than the statement of seasonal occurrence is the *time* of the occurrence. Here

dates should be freely quoted if a record has been kept, though general statements on this score are always better than none at all. The average time of arrival and departure should be given, followed where possible by a statement of the limiting or extreme dates, with years attached.

In addition it is well to mention the favorite haunts of a species, and state the *manner* of its occurrence—whether, at a given season, it is found single, in pairs, or in flocks, is in full song or voiceless, etc. Any new or interesting points in its life-history, or any other facts bearing on its distribution and migration, are of course also to be noted.

Where a list of birds is the result of but a few days' or weeks' study of a locality it is obviously out of the question to treat each species as fully as above indicated, but it is desirable to record as much as possible concerning its abundance, local distribution, haunts, nesting, and manner of occurrence during the period of observation. The writer is of the belief, based on personal experience, that a trained field observer can gain a very fair idea of the characteristics of the summer avifauna of a locality by a few days' careful work in the height of the breeding season, with the probability of error reduced to a minimum. Such a list, though necessarily incomplete, is correct so far as it goes, and of corresponding value.

Faunal lists may be roughly divide into three classes: first, those covering a comparatively restricted area and period of time, as above in-

dicated; second, those covering an area as large as a county for a year or more; and third, those which aspire to summarize our knowledge of the birds of a state and which should always be accompanied by a bibliography. It is scarcely necessary to add that the last is by far the most apt to be valueless and unsatisfactory, because of its usual lack of precision. General statements are all right, of course, but should be accompanied by the particular facts upon which they are based. Anyone who has ever attempted to map such records as "Breed regularly in Southern New Jersey", "Nests sparingly in the Northern and mountainous portions of the State", "Breeds in [the] Northern Peninsula", "Found all along the Atlantic seacoast", etc., will appreciate the fact of this suggestion. There has been a marked tendency to improvement of late years in State lists in this respect, of which Mr. Amos W. Butler's "Birds of Indiana" (Indiana Geological Report for 1897, pp. 515-1165), may be cited as a conspicuous and successful example. Mr. Harry C. Oberholser's "Preliminary list of the Birds of Wayne County, Ohio" (Bull. Ohio Agricultural Experiment Station, Technical Series, Vol. i, No. 4, July, 1896), may be mentioned as an example of a properly prepared county list, while Dr. Jonathan Dwight, Jr.'s paper on the "Summer Birds of the Crest of the Pennsylvania Alleghanies" (Auk, ix, 1892, 129), is to my mind fairly illustrative of a model faunal paper of more restricted range.

NESTING OF STEPHEN'S WHIPPOORWILL.

By PHILO W. SMITH, JR., St. Louis, Mo.

Having no recollection of ever having seen an article on the nesting habits or eggs of this Whippoorwill, I will give a few extracts contained in a letter from a friend who collected me two sets this season.

In camp in Cañon in Huachuca Mountains, Mr. O. C. Poling writes: "among the rarer sets and skins that I have taken for you are two fine fresh sets of the Stephen's Whippoorwill. After three days of almost constant search, I was startled by seeing something move right under my feet; it proved to be what I had been so long looking for—Stephen's Whippoorwill. The bird had to be driven from the nest, which contained 2 fresh eggs which I secured, together with the female; the nest was located on a steep hillside, and consisted of a few oak leaves in a slight depression; date May 12, 1889. The second

set was taken on May 22d, under almost the same conditions, the female refusing to leave the nest until driven off.

The two sets, now in the writer's collection, very much resemble in shape and color sets of the common Poor Will in his collection, being possibly a trifle larger, and one egg of each set has a few almost imperceptible pinkish spots on one end, the other egg in each set being unspotted.

A few among the good takes which Mr. Poling sent me were fine skins and sets of the following: Lucy's and Black-throated Gray Warbler, Vermilion, Buff-breast, and Sulphur-bellied Flycatcher, Arizona Jay, (2 eggs spotted), Painted Redstart, Strickland's Woodpecker, Lead-colored Bush Tit, etc., etc.

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Comments.

THE ORIGIN OF THE HAWAIIAN FAUNA.

In the OSPREY for January we considered the origin of the Bird Fauna of the Hawaiian Islands in comparison with that of the other Vertebrates. It was observed that the characteristic element of the Avifauna *appeared* to have been derived from American sources. The same origin must be conceded for the single non-marine mammal—a bat. On the contrary, all of the reptiles—seven species of lizards—are conspecific with representatives of the farther west or (in one case) closely related to such and must have come in from the west—that is, from the direction of Asia.

Far more numerous in species and more characteristic of the Hawaiian Archipelago are the preponderant element of the land shell-bearing Gasteropods. A comparison of them with the birds cannot fail to be of interest.

The Mollusks are represented among inland forms only by the class of Gasteropods, there being no fresh water mussels or clams (Unionidae and Corbiculidae). The Pulmoniferous Gasteropods, however, are represented by more than four hundred species and considerably more than three hundred of them belong to a peculiar group which has been designated as a family—Achatinellidae or Helicteridae although family or

even common—characters have not been discovered as yet. This group with its numerous species is peculiar to the islands and its nearest relations appear to be with Polynesian forms to the west. At any rate, there are no *certainly known* relatives on the American continents—North or South. It may be, however, that certain forms—for example the *Leptinaria*—of the West Indies and middle America are related and a most competent judge is inclined to believe that such is the case. Nevertheless, more nearly related forms are to be found in Polynesian islands and the westward generally.

In fact the question of the relationships of the characteristic forms of the Hawaiian Islands is still an open one and can only be positively answered when they and other forms have been subjected to a more critical and comparative examination of anatomical minutiae than has been done. The question is further complicated by the fact that there are two very distinct types of lingual dentition manifest among the forms collected together under the denomination of Achatinellidae. These types are so dissimilar that, if the shells of the animals possessing them were not so similar to each other and found in the same region, they would never have been regarded as belonging to related forms.

The most noteworthy feature of the land shells of the islands is the extraordinary numerical development and the restriction of most species to very limited areas. Fischer has given the number as over 400. ("On a decrit plus de 400 espèces"). These figures are near enough to the truth for our present purpose, especially as no two conchologists would be able to come to the same conclusions after independent studies. Specific variation is often so extensive and specific differences are often so slight that it is difficult in many cases to decide what are specific characters and what variants of lesser value. Knowledge of association and mode of occurrence of the forms might modify considerably the conclusions based on examination of the shells alone and would frequently, anyway, be suggestive or throw light on subjects otherwise obscure.

The question, then, what is the origin of the Hawaiian land shell fauna is not only difficult to answer in the present state of our knowledge, but is probably a complex one. It is scarcely likely that any of the forms are the derivatives of primitive types or from those that have existed there much earlier than the tertiary period. It is more probable that all are derivatives from forms that have drifted or been carried from

other regions, but on various occasions since early tertiary or perhaps cretaceous times.

The extent of differentiation and segregation of the predominant Achatinellines almost compels us to believe that their progenitors came upon the islands very early. With the present feeble light to guide us it seems to be more likely that these progenitors came from the west of the islands.

As to the other forms, there appears to be no evidence that they have been derived from the east—that is, from America. Their relationships, on the whole, are with forms of the Polynesian islands or even the Asiatic mainland. Nevertheless, the evidence is not conclusive and it may be yet proved that an American element has entered into the islands.

In fine, the evidence seems to indicate that the terrestrial Gasteropod fauna of the Hawaiian Islands has been mainly derived from sources western to the archipelago and thus we have an

apparently striking contrast between the origins of the characteristic elements of the Bird fauna and the Shell fauna. The evidence may, however, turn out to be superficial. The reality can only be positively demonstrated—or falsified—when detailed comparative anatomy has been applied to the taxonomy of the Achatinellines and to sundry other forms in the islands as well as outside of the archipelago. In the birds, we have had a similar stage. As long as the anatomy was unknown, we had not the criteria to decide what were the relations of many of the Hawaiian species. In fact, the last word has not yet been said of the birds and it may turn out that we will have to amend our notions respecting the affinities of some of them even. This, too, may lead to new conceptions of the origin of the avifauna. In the meantime, we had best accept the conclusions of our learned friend, Dr. Stejneger, but with a will to alter our opinion if the evidence shall compel.

Letters.

WHAT IS THE SQUEALER DUCK?

NEW YORK, Dec. 25, 1899.

EDITORS OF THE OSPREY:

In yesterday's (Sunday's) *Sun* of this city there is a long article on "Shooting Squealer Duck" in Arkansas which I send to you herewith. I have tried unsuccessfully to identify the duck, but I suppose it must have been described as so prominent a bird could scarcely have escaped recognition till the present time. It is described as being especially fond of acorns or mast. For the rest, let the writer speak for himself.

"This duck is in reality a variety of widgeon, though in habits it resembles the wood duck. It will even light in trees occasionally, though it does not nest in them. It gets its name from the peculiar whistling sound made by its wings when it is in rapid flight. This whistle at times becomes a positive squeal.

"The duck is about the size of the teal, with a pronounced topnot of black feathers. It is of a dark brown with less brilliant coloration of the wings. It is also plumper of body and will weigh more. In flight it is much like the teal, having the same rapid beat of the wings and it gets through the air almost as fast. It is more difficult shooting, because it is rarely found on open water. Deep buried in the woods, it spends the winter exploring the pond bottoms. It darts between trees and through branches at lightning speed and no man not a high-class snapshot can hope to make a respectable bag though the "squealers" be flying past at the rate of one every five minutes in the day. It derives its remarkable steering power from its tail, which is large and strong and may be elevated or depressed several degrees at the will of its owner. A 'squealer' in full flight, suddenly perceiv-

ing some danger ahead, will dart almost at right angles to its course. In turning it does not describe a wide curve, as do all other ducks. The depression of its tail and the depression of one wing and elevation of the other spin it half round almost as if it were a top. In another second it is out of sight, buzzing amid the green branches as if it were a dragon fly".

"There is no form of shooting which more severely tests the capabilities of the marksman, because aim must be taken in half a second and in that half-second every calculation must be made with something approaching to exactness. Often the passing birds are nearly as high as the tops of the tall trees. The space they cross is never more than fifty yards wide and sometimes it is not more than twenty-five yards. A "squealer" under full headway will fly twenty-five yards in much less than a second. If it be going at its best speed and one hundred feet high, it will be necessary for the ducker far below to lead it by not less than a dozen feet. Under these circumstances, it is not surprising that even the best of gunners can do no better than one in three.

"The 'squealer' is the only 'high-diving' bird known to this section and some of its feats in this way are marvelous. It is rarely injured in its mad plunges, seeming to possess an instinctive knowledge of the depth of the muddy water and the proper force with which the descent should be made. Indeed, the skill with which it steers itself at full speed in and out among giant limbs of the trees is not less marvelous than its apparent recklessness of plunge. The 'squealer' never hurts itself in darting through the forest unless it has been severely wounded.

There have been many instances of a bird blinded by shot, or shocked into craziness, hurling itself against a trunk or limb and falling dead. More than once also blinded birds have been caught in the huge masses of Spanish moss which hang high up, and there died, securely held but out of reach".

"The most distinctive note of this duck is the whistling sound made by its wings, but it has a queer sort of quack, mild and not far reaching, with a falsetto twang to it. Some men are very successful in imitating it.

"The bird is very excellent on the table, being of proper size for the broiler. Always at this season it is seal fat, the white tissue overlapping its red flesh in layers. Ducks fed upon acorns, or 'mast', are of as superior flavor as is mast-fed pork. They have a rich, nutty taste, the oil from the acorns and beech nuts appearing to go into their meat. A characteristic of their fat is that not any quantity of it will produce indigestion when it is thoroughly cooked".

What is the bird? I am sure others would be interested to know as well as myself. I should like to see the whole article republished in the OSPREY even, so as to be preserved in convenient and permanent form. Will you do so?

Yours truly,

C. W. C.

ANSWER.

We reprint the extracts sufficient to give the prominent characteristics mentioned by the writer in *The Sun*. The article, occupying a column and a-half of *The Sun*, is too long to be republished in full.

The bird referred to by our correspondent is perhaps—almost probably—the Hooded Merganser, *Lophodytes cucullatus* of ornithologists. In this opinion, Mr. Ridgway and Dr. Richmond concur. The name "Squealer" does not appear to have been recorded previously in connection with this bird. The only duck to which the term has been attributed hitherto is the Harlequin (*Histrionicus*) which, according to Mr. Gordon Trumbull, is so designated in some parts of Maine. We are therefore happy to learn that the Hooded Merganser may be similarly named in Arkansas. Few of the vernacular names current in the west have been collected. In fact, the only ones known to us are Wood duck and Tree duck current in the Wabash valley, Bec-scie (Saw bill) about Mobile, Hairthead and Tadpole in Florida (around St. Augustine), and Spike-bill in Michigan (near Detroit). The synonyms employed in the Atlantic states are numerous.

The account of the Squealer essentially accords with those given by authors of the Hooded Merganser although the characteristic features are emphasized or perhaps exaggerated. Three exceptions should be made.

The statement of the writer that the "duck will even light in trees occasionally, though it does not nest in them" is remarkable and is the chief reason for the gravest doubt about the

correctness of our identification. It is just in trees that the Hooded Merganser does nest, but by trees we mean those more or less hollowed out. It resembles the true Wood or Summer duck in this respect, and indeed sometimes disputes possession of a goodly site with that species. Such an instance was noticed by Mr. George A. Boardman of Calais, Maine. It is to be remarked that although the writer says that "there have been many established instances of its breeding in this part of the state" [about Frostville] and that "it is a fecund duck" no details of its nesting are given.

The statement that the Squealer feeds on mast is also opposed to what we know of the habits of the *Lophodytes* as well of its apparent capacity. The narrow bill of that bird seems to be little adapted for seizing or giving passage to acorns.

Finally the Hooded Merganser has not a high reputation as an edible duck. In the words of Baird, Brewer and Ridgway (*Water Birds* ii, 123) "its flesh is not held in high esteem" and by most persons it is discredited; nevertheless it is quite supposable that one fed on mast might be quite palatable. But does it really feed on mast?

In fine, a pronounced topknot is only possessed by the Hooded Merganser (*Lophodytes*) and the Summer or Wood duck (*Aix*). Inasmuch as the Wood duck is excluded by special mention the Hooded Merganser alone remains, and the "pronounced topknot of black feathers" is characteristic of that bird, although even in summer plumage it is relieved by white. Will not some "Arkansas traveler" or resident send us a specimen and thus enable us to verify our guess or disprove it, and ascertain what the Squealer really is? We can only say that if it is not the Hooded Merganser, we do not know what it is. It cannot be an undescribed species.—EDITORS.

SUNDRY QUESTIONS AND ANSWERS.

KINGSVILLE, OHIO, Jan. 2, 1900.

EDITORS OF THE OSPREY:

I herewith enclose a few questions for your consideration, and will be glad if you can answer.

Respectfully,

J. M. KECK.

QUESTIONS.

1. For a number of winters I have observed small flocks of gulls of different species flying westward along the Ohio shore of Lake Erie. I have never seen any moving eastward. Residents on the lake shore have told me that they have never seen them passing eastward. Can any one explain?

2. Can any Ohio readers give any authenticated instances of wild ducks, aside from the wood duck, breeding in Ohio during the last five years?

3. In the Ohio Geological Survey, Vol. iv, Dr. Wheaton mentions the Great Grey Owl, *Syrnium cinereum*, as an "extremely rare winter visitor." Have any OSPREY readers observed it south of the lakes? Can any one give its nesting locality and habits?

4. Is it true that the Nighthawk has taken to nesting on the flat roofs of tall buildings in cities?

ANSWERS.

1. The movement in apparently but one direction is probably due to the fact that these birds, through some peculiarity of prevailing wind direction or land configuration, fly close to shore only when passing westward, and that they return by a route farther out in the lake, thus escaping casual observation; a condition of affairs not infrequent in other localities.

2. There do not seem to be any *published* records, though such occurrences may be known to some of the OSPREY's readers.

3. Although a comparatively frequent winter visitor to New York State and at least the more northern sections of New England, the Great Grey Owl appears to be quite rare in Ohio, and no very recent records have come to light. The

species breeds in Alaska and British America from Hudson's Bay northward to the limit of trees. Information regarding its nidification is very scanty, but enough is known to indicate that its nest is commonly constructed of twigs and moss, with a lining of feathers, and placed in the branches of spruce or poplar. The eggs are from two to four in number, and are deposited sometimes as early as April, or even as late as June.

4. The nesting of the Nighthawk upon the flat roofs of city buildings has become so well attested that no doubt whatever remains of the fact. Indeed, so numerous are the instances, that they are no longer considered remarkable or unusual.

H. C. O.

Notes.

THE OSPREY IN ENGLAND is the subject of an editorial article in *The Saturday Review* for December 2, 1899. It is so interesting and pertinent in some respects to conditions in the United States that we feel it will be a service to the readers of the OSPREY to republish it, since the *Review* is accessible to few of them without much trouble.

The *Review* thinks that the bird is one "that loves quietness and seclusion" and that "its former Southern Coast haunts will for that reason probably know it no more." Dispair need not be entertained on that account, however, for the bird readily accommodates itself to human company when encouraged to do so. The pages of the OSPREY record several nests in villages protected by the human inhabitants.—EDITORS.

THE OSPREY.

The shooting of an osprey in Norfolk, on the ornamental waters of Mr. Justice Cozens-Hardy's estate, not long since, enables us to call attention to the case of one of our most interesting British birds, now hunted by collectors to the very verge of extinction. The rare specimens which occasionally visit the old haunts of the species almost invariably meet with the fate of this Norfolk bird; the first prowling gunner who observes them lets fly at them. And in this the osprey's lot does not differ from that of other rare birds; witness the fate of the honey buzzard the other day which roused Sir Herbert Maxwell's righteous indignation, though apparently he sees nothing to object to in the massacre of Muscovy ducks. With a little encouragement and intelligent protection from landowners the osprey might again be a familiar feature of our island waters; but in face of the fact that every specimen is shot down as soon as it appears, the naturalist who desires to see our country rich in varied feathered life may well despair of any such consummation. A few Scottish owners have done their best to preserve the species, and thanks to their efforts it still breeds in one or two of its North British haunts; but it has vanished from England. Is it too much to hope that an appeal to English landowners may result in effective

protective action with a view to wooing it back again?

It is not likely, even with the most widespread protection, that the bird would ever again cover the whole extent of its old range. It is a bird that loves quietness and seclusion; its former Southern Coast haunts will for that reason probably know it no more. But in the Lake district, where it used to breed prolifically, in the Broad district of the Eastern Counties, and several similar well-watered areas, there are still many remote and quiet places to which it could undoubtedly be encouraged to return. It is especially fond of well-wooded waters. Rivers and meres in woodland districts, overgrown islets, and similar places, give it the conditions under which it would flourish again if only the gunner could be persuaded to stop his campaign of destruction against every specimen that makes a tentative visit to our shores.

In its habits of life the osprey, if it could be induced to return to us, would be one of the most picturesque features of our water areas. The effect of the presence of a few of these fine fishing-eagles about an island lake is very striking. It has something of the hovering habit of the kestrel in its flight; and its pounce and struggle with its prey is one of the most interesting sights imaginable. It is a noisy fisher, making a prodigious splash when it plunges, sometimes going clean under the surface after a fish. It has the spiked feet characteristic of the fishing-owls, and this feature gives it a very great power of talon-grip that occasionally leads to Homeric battle between itself and its prey, in which the bird does not always come off best. For this spiked grip makes it difficult for the osprey to unlock its talons once they are closed upon the victim; and although that is an advantage when a small fish is seized, it is sometimes the reverse; and instances have been observed in which the bird has been dragged and held under water, and drowned before it was able to loosen its grip from the Tartar upon which it had pounced.

Its destruction of game fish might be urged as a reason against the preservation of the osprey; and certainly it is not a desirable neighbour for salmon and trout. But that is not a point that

can be urged against its preservation in such an area as the Broad district, where there are no game fish to be considered. A coarse fishing area such as the Broad district would certainly be benefited rather than injured by the presence of the ospreys; since they would help to thin out the huge numbers of bream that preponderate in such waters. Bream, as a surface fish—in the early morning the streams and lakes are alive with shoals of them tumbling on the surface—would be the chief prey of the osprey in such areas, to the advantage of the fishing generally, since the overwhelming preponderance of bream in our sluggish coarse-fishing waters is a nuisance rather than a gain to anglers.

Its nesting habits, again, should mark it out as a species to be encouraged by those land-owners who have any care for the picturesque side of the wild life of their estates. An eyrie of ospreys would be an estate feature of a very notable kind. The nest is a huge structure of sods, twigs and grass, built as high up as the bird can find branches adequate for its support. A tree with a dead top and a lateral spread of branches at the live summit is its favourite building place; and there it spreads out a nest to the width of three or four feet, projecting outwardly so far that it is often impossible for a climber to get access to it. In the absence of such trees it will build in old ruins, and even on the bare rock in places difficult of access. The tree-built eyries are visible a great distance off; and have a fine effect upon wooded islands and forest-bordering waters. The possession of a stray specimen in a glass case is hardly an adequate compensation for the loss of the living creatures from our English landscape. We would fain hope that the better class of owners, to whom their landlordism is a trusteeship for such purposes, might even now, when the species is so nearly at the verge of extinction as a breeding British species that any such attempt must be doubtful in its issue, take such steps as may yet give us back so interesting a creature. We commend the osprey to the Wild Birds' Protection Society, which we are glad to see is issuing a Christmas card of its own. The Society's best chance of success lies in work amongst children, and the Christmas card makes an apt and graceful device for spreading the gospel of bird-love. That the design is good goes without saying, seeing that it is the work (and gift) of Mr. Archibald Thorburn.

THE CHARACTERISTIC BIRDS OF NATAL and the neighboring Boer States are noticed in *The Spectator* of London, for January 13, under the caption of Naturalists on the battle field. It is remarked that "letters from Natal and the Cape frontier show that, when not marching or fighting, the officers and soldiers find abundance of interest in the Natural History of South Africa." It seems that a useful little book on the birds of Natal and Northern Cape Colony "has been published in Pietermaritzburg by R. B. & J. D. S. Woodward (Davis and Son, Pietermaritzburg, 2s. 6d)." *The Spectator* has used this in its notice of the birds and so much as relates to them we publish in the OSPREY. "The Tugela Valley is famous for its birds and flowers".

"The birds of these regions are curiously mixed. Many, like the shrikes, flycatchers, and swallows, recall our familiar birds. Our English cuckoo and English swallow actually migrate as far as this far Southern continent. In contrast with these are others not excelled in brilliant plumage by the birds of the tropics, and in the same Colony in which our common red-backed shrike makes its winter home are the magnificent purple and green turacos, or plantain-eaters, and sun-birds, which rival the brilliant hues of the humming-birds. Whole tribes of different flycatchers, warblers, and shrikes inhabit the bush. Some of the bush-warblers' nests are triumphs of architecture. One stitches its nest on every side to leaves of laurels by spider-web silk; another sews its home to the leaves of tall weeds by threads of grass. The emerald cuckoo, which has a note much like that of our cuckoo, only with both syllables "long"—"coo-coo"—lays its eggs in the nests of the Karoo sparrows. The brilliant Whydah finches are well known in English aviaries. There are hoopoes, many kingfishers, some of which live mainly on locusts and do not touch fish, honey-guides, and swarms of kites and buzzards. One of the best known birds is a large grey shrike, called the "Fiscal." The "Fiscal" was a Dutch Magistrate with a large discretion in the matter of capital punishment, and the ways of this shrike rendered the name appropriate. It twists off the heads of small birds, quarters their bodies, and impales them on convenient thorns. English Colonists call it "Johnny Hangman." When kept in a cage, it will hang up all its food in this way if proper hooks are provided. It flourishes in spite of the reclamation of the Colony, and has established itself in the parks and public gardens of the towns. The familiar birds of everyday life, those which correspond to the species best known at home, are always matter of interest in a strange land. In Natal the place of our rook is taken by the black crow, which is gregarious, and increases, just as our rook does, on cultivated land, whence its Colonial name of "corn crow." Besides this South African rook there is a white-necked raven, which has the habits of our carrion crow. Before the appearance of rinderpest it was very common. But like the vultures, these carrion crows were poisoned by eating the flesh of the oxen killed by the plague, and died off in numbers. The great vulture of the hills, the "Aarvogel," was seen both at Magersfontein and at Modder River soaring over the kopjes. It is the same bird as the griffon vulture of Southern Europe, almost the largest of the flesh-eating birds of the Old World. Nor must the secretary-bird be forgotten, which is protected by law, and almost domesticated on many farms, on account of its reptile-killing habits, or the "smoke-bird," a black shrike, which follows the bush fires and feeds on roasted insects and grilled mice. Though our English swallow flies as far south as the old Colony, the domestic swallow of South Africa is the red swallow. Its head and back above the tail are red, like the throat of the English swallow. Like the latter, it is a home favourite. The Colonists put up boards as supports for its nests, and encourage it in

every way. The direct services which it renders in keeping down the number of mosquitos and flies would entitle it to protection if sentiment did not make the same claim. The Cape canary, the best song-bird of the Colonies, is common in the gardens round Pietermaritzburg, while on the Tugela a large yellow canary is found. The common canary comes in spring, and has a small relation, the "mealie bird," which lives mainly in the patches of Indian corn."

"It was reported that among the casualties at Modder River were several cases of snake-bite. This is not unlikely, for the men were lying and crawling on the hot plain, where snakes love to bask. The snakes of South Africa are both common and deadly."

"The greatest enemies of the snakes are the kites and eagles, especially the tawny eagles. These, and a very fine black eagle called the Verreenx eagle, are common on the lower slopes of the Drakensberg. If the fortunes of war change in Natal, soldier naturalists may be interested to know that the latter bird breeds close to the Upper Tugela falls, on a cliff eight hundred feet high. Young eaglets from such an eyrie would be a trophy worthy of a Roman legion."

AN UNFORTUNATE INVESTMENT IN EGGS.—One of the most peculiar situations in regard to the egg supply ever known exists in the United States to-day. The situation is the result of storing eggs in an attempt to control the market. There are liable to be two results. One is that the people of the country will have cold storage eggs hoisted upon them as the newly-laid product. The other is that the people who attempted to "corner" the market will suffer heavy losses.

The beginning of the "cornering" effort dates back to last summer. At that time, it is said, the Chicago packers evolved the scheme of buying up all the eggs that could possibly be gathered together and storing them until the supply became scarce. As is usual in schemes, it was anticipated that the scarcity would send the price sky high. Then the stored eggs were to be unloaded on the market and a fortune was to be made for the packers. It is figured that 7,000,000 cases, each case containing thirty dozen eggs, were stored away. To the industrious hen, whose capacity is one egg a day, this is an exceedingly large amount.

The scheme to control the market fell through. There was no call for the stored eggs and the packers began to lie awake o' nights thinking. At present the hens are beginning to lay fresh eggs. These are coming into the market and no one wants the stored eggs.

A little figuring will show how enormous the loss will be. There are 7,000,000 cases of eggs, or 210,000,000 dozen, stored throughout the country. These were bought up at 15 cents a dozen. The present price of eggs a dozen outside of Cleveland is on an average four cents less a dozen than the price at which the stored eggs were bought. This will mean a loss of about \$8,400,000 to the packers. It is conjectured that there are 6,000 cases of the stored eggs in this city. The loss here will also be very large.

It is reported that the packers in this vicinity have a way out of the dilemma. It is said that next summer when eggs are shipped here from outlying towns, the stored eggs will be mixed with fresh ones and that in that way the old product will be sold to the unsuspecting public. —*Cleveland Plain Dealer.*

AN EGG OF *ÆPVORNIS MAXIMUS* was sold at auction by Mess. Stevens of London for forty-two guineas on November 7th. It was bought by Mr. T. G. Middlebrook.

THE DEATH OF SIR JAMES PAGET will be felt by physicians more than naturalists. He was, however, interested in early life in zoology and known as an ornithologist. In conjunction with a brother, Charles, in 1834 he published "A sketch of the Natural History of Yarmouth," including the birds as well as other animals. He was born in 1815 and died in London, December 30, 1899.

THE DEATH OF EDGAR LEOPOLD LAYARD followed fast on that of another student of South African Birds, Dr. A. E. Stark, recorded in the OSPREY for January, (p. 80).

Mr. Layard died at his residence in Budleigh, Salterton, Devon, January 1, 1900. He is best known to most ornithologists in connection with his "Birds of South Africa" (1867), but was also the author of numerous articles on birds of other lands, especially Polynesian, either alone or with others.

Literature.

WABENO, THE MAGICIAN: The Sequel to Tommy-Aunc and the Three Hearts. By Mabel Osgood Wright. Illustrated by Joseph M. Gleeson. New York. The MacMillan Company. 1899 [12mo. pp. i-ix, 1-346. \$1.50.]

All who have had the privilege of perusing Mrs. Wright's earlier volumes will surely welcome this, her latest production. Following lines similar to the book of which it forms a continuation, it carries the already familiar friends into new but no less interesting fields of inquiry, and the trials, joys and wonderments of their every-day life are charmingly interwoven with many and various details of accurate

nature narrative; now imparted through the medium of quaint Indian legend, now by the impersonation of some animal or some inanimate object, yet always with the same rare sympathy, the same charm of expression, which are such distinguished characteristics of our author's previous writings. Indeed, "Wabeno, The Magician" possesses all the fascination of a fairy tale, with none of its incongruities, and from cover to cover can scarcely fail to hold the attention of young and old. In every respect the present volume is fully the equal of its predecessors, and when this can be said nothing remains to be added.—H. C. O.

OUR NATIVE BIRDS: How to Protect Them and Attract Them to Our Homes. By D. Lange. With Illustrations.—New York. The MacMillan Company. 1899 [12mo. pp. i-xii, 1-162. \$1.00.]

In this little manual the author discusses the various causes which operate to decrease the numbers of our birds, suggests means by which the birds may be attracted, and makes recommendations for their protection. The several captions under which the subject is treated are given below, and will serve for a very good index of what the book contains: "Are the Birds decreasing?" "Causes for decrease of Song Birds"; "The decrease of Game Birds"; "Protecting Song Birds and attracting them to Our Homes: (1) By furnishing them trees, vines and shrubs; (2) Provide nesting boxes; (3) Provide drinking and bathing fountains; (4) Feeding birds in winter, and in unfavorable weather at other seasons; (5) Miscellaneous—Nesting material, dust baths, gravel and lime; (6) Protecting the birds from their natural enemies; (7) The English Sparrow question; (8) Birds on hats, boys, collectors, so-called bird students, bird hunters, ubiquitous gunners; (9) Song Birds as food"; "Education and the birds: (1) Educating adults; (2) Educating the growing generation"; "Game protection from the Nature Lover's Point of View"; "The Birds before Uncle Sam" (an exercise for children). Under "Miscellaneous Information" there are added lists of magazines, protective societies, Agricultural experiment stations, bulletins of the Department of Agriculture, and helpful books for the beginner, the last of which, however, might obviously be greatly extended.

Altogether, Professor Lange has brought into convenient form for reference an amount of information which will be appreciated by everyone interested in the important subject of bird protection.—H. C. O.

THE AVIFAUNA OF THE PRIBILOF ISLANDS. By William Palmer.—The Fur Seals and Fur Seal Islands of the North Pacific Ocean, Part iii, Special Paper xvii. (pages 355-431, plates xxxviii-xli).

Notwithstanding that the recent considerable scientific interest in the Pribilof Islands has resulted in the appearance of a number of more or less voluminous reports, very little during the past twenty-five years has been published concerning the birds of this isolated group; and Mr. Palmer's elaborate treatise is thus all the more welcome. While drawing freely from all sources of information, published or otherwise, the author gives us from his own abundant experience and careful study much of valuable interest.

Following a check-list of the species and a brief introduction, the topography of the Islands is considered, chiefly from an ornithological point of view; the two main islands, St. Paul and St. George, together with the two smaller ones, Walrus and Otter, being separately described. The ornithological history of the Islands is briefly stated; the six species described and the four added to the North Ameri-

can fauna from specimens taken in the group are listed; and all the species are tabulated with reference to the manner of their occurrence. The geographical distribution of Pribilof birds, including the faunal affinities of the Islands, receives considerable attention, leading up to the conclusion that "The Aleutian Islands, the islands of Bering Sea, and much, perhaps all, of the mainland coasts of Alaska and northeastern Asia to the Arctic Sea" constitute, within the Holarctic Region, a "subregion" which is here called the "*Aleutican*". A table showing the distribution of the family Alcidae in North America, and some remarks on the migration of Pribilof birds are also added.

Succeeding this more general matter is the catalogue proper, consisting of 69 species with various critical and biographical notes, the latter often extensive. A further analysis of the list discloses the fact that but 15 are land birds; and that only 20 are known to breed, though 9 others are doubtful, included in the same category. Eighteen species, more than a fourth of the whole, are entered without any known instance of actual capture. In his account of the turnstones (*Arenaria*) Mr. Palmer takes occasion to separate the middle American form of *A. interpres* from that of Alaska, the former standing as *A. morinella* (Linnaeus); but specific rank seems inadequately established, and the bird should probably be called *Arenaria interpres morinella*. A previously unrecognized race of the Barn Swallow, from Alaska—*Hirundo erythrogastra unalaschkensis* (Gmelin) is also distinguished. Reasons are given for considering *Tringa pitlochemis* and *Passerina nivalis townsendi* as full species; in the former case with apparent justification; but in the latter not so, for the principal character claimed for *townsendi*—its larger size—is invalidated by Mr. Palmer's own measurements.

Various notes scattered through the paper present some of the results of the author's investigations on the several feather growths, particularly those of early stages of plumage, and from a desirable addition to our knowledge of the subject. A new name—*Mesoptile*—is given to the individual feathers of the plumage immediately following those of the natal down, or *Neosoptiles*, to distinguish the former from the *Teleoptiles*, or feathers of the adult; but the necessity or advisability of such action is not obvious, inasmuch as a sufficient structural difference from the teleoptiles seems difficult to establish.

The classification of the higher groups comprised in the present list is based largely upon characters derived from the neosoptiles, and, it is scarcely necessary to add, differs radically from that of the A. O. U. Check-List. The four halftone plates represent (1) typical scenes on Walrus Island, (2) a series of eggs of the Pacific Murre (*Uria lomvia arra*), showing variations, and (3, 4) various phases in the development of feathers. A bibliography of the more recent publications touching the birds of the Pribilof Islands fittingly closes this excellent paper.—H. C. O.

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